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# Appendix V: Cable Network Carriage Model

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This appendix describes our model of cable network carriage that we developed to test whether ownership affiliations influence cable operators' decisions about what networks they will carry. Specifically, we discuss (1) the set-up of our model, (2) the data sources and descriptive statistics, (3) the estimation methodology and results, and (4) an alternative specification.

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## Set-up of Our Cable Network Carriage Model

A cable operator will carry a cable network if, on the margin, the network increases the operator's profit or increases its profits more than an alternative cable network. Cable operators receive revenue associated with cable networks from both subscriber fees and local advertising. Therefore, the addition of a popular cable network will likely increase the operator's revenues by allowing the operator to impose higher monthly cable rates on subscribers and sell additional local advertising at higher rates than would be possible with a less popular network. At the same time, the cable operator will incur programming costs associated with the cable network. Thus, the cable operator will balance these various revenue and cost factors when deciding whether to carry a given cable network

In interviews with 11 cable operators, we were told that broadcast networks often link carriage of cable networks to retransmission of local broadcast stations. In addition to these broadcaster affiliations with cable networks, some cable operators are also affiliated with cable networks. In fact, several studies have indicated that cable ownership of cable networks influences the carriage of cable networks—so there is some precedent that ownership, albeit of a different form, influences carriage decisions.<sup>1</sup> To examine whether these ownership affiliations—broadcaster and cable operator ownership of cable networks—influence the carriage of cable networks by cable franchises, we employed a model that tests whether certain variables increase or decrease the probability of a cable network being carried on a particular cable franchise. To empirically test

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<sup>1</sup>For example, see Waterman, D. and A.W. Weiss, "The Effects of Vertical Integration Between Cable Television Systems and Pay Cable Networks," *Journal of Econometrics*, 72 (1996): 357-395 and Chipty, T., "Vertical Integration, Market Foreclosure, and Consumer Welfare in the Cable Television Industry," *American Economic Review*, 91(3) (2001): 428-453. These studies found that cable operators were more likely to carry networks that they owned. These studies, however, did not test whether cable operators were more likely to carry a network owned by a broadcaster.

these hypotheses, we estimated the following. Carriage of a cable network on a cable franchise is a function of

- the age of the cable network,
- the popularity of the cable network as measured by advertising revenues per subscriber,
- whether the cable network primarily distributes news- or sports-related programming,
- whether the cable network is affiliated with a broadcast network or a cable operator,
- cable system capacity in terms of megahertz,
- the number of households passed by the cable system,
- the percentage of people in the franchise area between ages 25 and 65,
- the percentage of households in the franchise area that own their homes, and
- whether the cable franchise is owned by a cable multiple system operator.

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## Data Sources and Descriptive Statistics

We required several data elements to build the dataset used to estimate this model. The following is a list of our primary data sources. In addition, we list all of the variables, definitions, and sources in table 4 and basic statistical information on all of the variables in table 5.

- We obtained data on the carriage of individual cable networks on cable franchises from FCC's 2002 survey of cable franchises. FCC's survey asked a sample of cable franchises whether the franchise carried various cable networks. We used the survey to define a variable representing whether a given cable network was carried on either the basic or expanded-basic tier. In addition, we used the survey to define variables measuring (1) the system megahertz (the capacity of the cable system in megahertz), (2) the number of households passed by the cable system, (3) the affiliation of the cable franchise with a multiple system operator, and (4) the ownership affiliation of the cable operator.
- From Kagan World Media, we obtained data on cable networks, including (1) the year the cable network launched, (2) the number of cable

subscribers that received the cable network in 2002, (3) the advertising revenue the cable network received in 2002, and (4) the ownership affiliation of the cable network.

- We used the most recent data from the U.S. Census Bureau to obtain the following demographic information for each franchise area: proportion of the population between ages 25 and 65 and the percentage of the households that reside in owner-occupied housing.

**Table 4: Definitions and Sources of Variables**

Variable	Definition	Source
Carry	A binary variable that equals 1 if the cable network is carried on the basic or expanded-basic tier	FCC 2002 cable rate survey
Age	2003 minus the launch year of the cable network	Kagan World Media
Advertising revenue per subscriber	The cable network's advertising revenues divided by the number of subscribers that could receive the cable network in 2002.	Kagan World Media
News	A binary variable that equals 1 if the cable network primarily delivers news-related programming.	GAO analysis
Sports	A binary variable that equals 1 if the cable network primarily delivers sports-related programming	GAO analysis
Broadcaster affiliation	A binary variable that equals 1 if the cable network is affiliated with a broadcast network group (Disney/ABC, Viacom/CBS, News Corporation/Fox, General Electric/NBC, or Scripps), and the cable network began operation in 1992 or later	Kagan World Media
Cable affiliation	A binary variable that equals 1 if the cable network is affiliated with a cable operator (Time Warner, Cablevision, or Comcast)	Kagan World Media
Homes passed by cable system	The number of households passed by the cable system that serves the franchise, including homes outside of the franchise area	FCC 2002 cable rate survey
Cable system megahertz	The capacity, measured in megahertz, of the cable system that serves the franchise area.	FCC 2002 cable rate survey
Multiple system operator	A binary variable that equals 1 if the cable franchise is affiliated with a cable multiple system operator.	FCC 2002 cable rate survey
Population between ages 25 and 65	The percentage of the population in a franchise area between ages 25 and 65.	U.S. Census Bureau
Home ownership	The percentage of households in the franchise area residing in owner-occupied housing units	U.S. Census Bureau

Source: GAO (2003)

Table 5: Descriptive Statistics

Variable	Mean	Standard deviation	Minimum value	Maximum value
Carry	0.43	0.50	0.00	1.00
Age	10.68	6.61	1.00	27.00
Advertising revenue per subscriber	1.91	2.19	0.00	10.98
News	0.06	0.24	0.00	1.00
Sports	0.09	0.28	0.00	1.00
Broadcaster affiliation	0.25	0.43	0.00	1.00
Cable affiliation	0.20	0.40	0.00	1.00
Homes passed by cable system	178,212.05	244,160.35	73.00	1,286,698.00
Cable system megahertz	672.57	171.08	212.00	870.00
Multiple system operator	0.95	0.23	0.00	1.00
Population between ages 25 and 65	52.09	2.92	37.26	62.94
Home ownership	68.16	10.02	19.46	84.90

Source: GAO (2003)

## Estimation Methodology and Results

Because we are estimating a binary choice model—that is, the cable franchise either carries or does not carry a given cable network—we employed the logit method to estimate our reduced-form equation of cable network carriage.<sup>2</sup> We present the estimation results for our reduced-form equation in table 6.

<sup>2</sup>An alternative method to estimate the reduced-form equation is the probit model. In a binary choice model, the differences between the logistic and probit models are generally not significant. Differences can arise in the multinomial model, where there are three or more choices, because the logistic model imposes independence conditions that sometimes do not reflect the conditions being modeled. Such was not the case in our model, since we estimated a binary choice equation.

**Table 6: Logistic Model Results**

Variable	Parameter estimate and [p-value]
Age	0.1558 [0.0001] <sup>a</sup>
Advertising revenue per subscriber	0.7537 [0.0001] <sup>a</sup>
News	0.6769 [0.0001] <sup>a</sup>
Sports	0.0812 [0.0472] <sup>b</sup>
Broadcaster affiliation	0.8265 [0.0001] <sup>a</sup>
Cable affiliation	0.5817 [0.0001] <sup>a</sup>
Homes passed by cable system	0.0000 [0.0011] <sup>a</sup>
Cable system megahertz	0.0029 [0.0001] <sup>a</sup>
Population between ages 25 and 65	0.0061 [0.1191]
Home ownership	0.0068 [0.0001] <sup>a</sup>
Multiple system operator	0.3059 [0.0001] <sup>a</sup>
Intercept	-6.5658 [0.0001] <sup>a</sup>
Sample size	55,728
Rescaled R-square	0.5075

Source: GAO (2003).

<sup>a</sup>Significance at the 1 percent level.

<sup>b</sup>Significance at the 5 percent level.

Our model results indicate that ownership affiliation does influence the carriage of cable networks, as both broadcaster affiliation and cable operator affiliation are associated with a greater probability of a cable network being carried on a cable franchise. When calculated at the mean values for all of the variables in the model, cable networks affiliated with broadcast networks are 46 percent more likely to be carried than networks

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that do not have broadcast ownership.<sup>3</sup> Similarly, when calculated at mean values for all of the variables included in the model, cable networks affiliated with a cable operator are 31 percent more likely to be carried on a cable franchise than noncable-affiliated networks.

The remaining variables generally had the expected impact on the likelihood of a cable network being carried on a cable franchise. Popular networks—as represented by high levels of advertising revenues per subscriber—and news- and sports-related networks were more likely to be carried on franchises than less popular networks and networks primarily delivering other program genres. Also, cable franchises with larger capacity were more likely to carry any given cable network, and franchises with a high percentage of people residing in owner-occupied housing were also more likely to carry any given network.

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## Alternative Specification

In addition to the above specification, we also considered a narrower definition of cable affiliation. In this specification, a cable network was only considered to be cable affiliated if the cable operator that owned the cable network also owned the cable franchise. For example, a cable network owned by Comcast would be considered cable affiliated when it appeared on a Comcast cable franchise, but not on another cable company's franchise, such as a Time Warner franchise. In this specification, cable networks affiliated with a cable operator are 64 percent more likely to be carried on the affiliated cable franchise than a nonaffiliated cable network. Cable networks affiliated with broadcast networks remain more likely to be carried than cable networks not affiliated with broadcasters. We present the estimation results for this alternative specification in table 7.

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<sup>3</sup>We calculated these percentages by taking the mean values of all variables included in the model and deriving a predicted value of carriage for a broadcast-affiliated network and a nonbroadcast-affiliated network. We then took the percentage differences in these predicted values. The same methodology was used for determining the relative likelihood that a cable-affiliated network would be carried.

**Table 7: Logistic Model Results**

Variable	Parameter estimate and [p-value]
Age	0.1558 [0.0001] <sup>a</sup>
Advertising revenue per subscriber	0.7360 [0.0001] <sup>a</sup>
News	0.6495 [0.0001] <sup>a</sup>
Sports	0.1558 [0.0001] <sup>a</sup>
Broadcaster affiliation	0.6877 [0.0001] <sup>a</sup>
Cable network owned by operator	1.4091 [0.0001] <sup>a</sup>
Homes passed by cable system	0.0000 [0.0131] <sup>b</sup>
Cable system megahertz	0.0029 [0.0001] <sup>a</sup>
Population between ages 25 and 65	0.0054 [0.1677]
Home ownership	0.0069 [0.0001] <sup>a</sup>
Multiple system operator	0.2915 [0.0001] <sup>a</sup>
Intercept	-6.3393 [0.0001] <sup>a</sup>
Sample size	55,728
Rescaled R-square	0.5065

Source: GAO (2003)

<sup>a</sup>Significance at the 1 percent level

<sup>b</sup>Significance at the 5 percent level

# Appendix VI: Comments from the Federal Communications Commission

Note GAO comments supplementing those in the report text appear at the end of this appendix



Federal Communications Commission  
Washington, D C 20554

September 24, 2003

Mr Mark Goldstein  
Acting Director, Physical Infrastructure Issues  
United States General Accounting Office  
Washington, DC 20548

Dear Mr Goldstein

Thank you for the opportunity to review GAO's draft report entitled *Telecommunications Issues Related to Competition and Subscriber Rates in the Cable Television Industry* (GAO-04-8). It is my understanding that your staff has met with Commission staff and has received data, comments, and assistance from them.

There are two primary areas of the draft report that are seriously misleading and upon which we would like to comment. The first relates to the statutory framework that the Commission is legally obligated to adhere to in making effective competition determinations. The second relates to the Commission's use of estimates provided by cable operators to determine the relative importance of factors that explain cable television rate increases.

The GAO Report states that the "FCC's designations of franchise areas as having (or not having) effective competition do not always accurately reflect current competitive conditions and, in the case of effective competition based on DBS service, FCC has not sought to validate the industry data used to substantiate these filings." Our Annual Price Survey is not an independent inquiry into competitive conditions, but rather a statutorily defined survey based on a legal framework -- adopted by Congress -- which specifies the definition of effective competition and the administrative process through which cable operators file petitions seeking findings of effective competition.

The rate regulation provisions enacted by Congress require participation by the local franchising authorities (LFAs) to work effectively. An LFA may regulate basic rate increases if the local cable system is not subject to effective competition. An LFA must be certified to regulate basic rates, if it would like to do so. A cable operator seeking effective competition status files a petition with the Commission providing data to demonstrate that it meets one of the four statutory tests for effective competition. The cable operator is required to serve its petition on the LFA, which provides an opportunity for the LFA to oppose the petition and provide countervailing evidence for Commission review.

In making determinations of effective competition, the statutory process allows the Commission to rely on data from external sources, for example DBS penetration data from SkyTRENDS. Because copies of the petitions for determination of effective competition filings -- including

See comment 1

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copies of the full SkyTRENDS reports for the relevant communities -- are available to the LFAs under the statutory framework, the LFAs have an opportunity to file objections in the effective competition proceedings if they believe the data are inaccurate. No LFA has ever made a serious charge that the SkyTRENDS data were not sufficiently accurate for these purposes, nor are we aware of a better source for such data.

See comment 1

If circumstances change and the criteria for "effective competition" as defined by our governing statute are no longer present, the statute provides LFAs have an opportunity to file for recertification, but they are under no obligation to do so. If an LFA chooses not to file for recertification, the Commission has no legal basis upon which to act to change a cable operator's effective competition status for purposes of rate regulation. In situations where a cable operator has met the definition of effective competition and a finding to that effect has been made, the cable operator has no obligation under the statute to inform the LFA or the Commission of changed circumstances. In addition, there may be situations in which LFAs may be aware of changed circumstances and for various reasons choose not to file for recertification.

See comment 1

See comment 3

The statutory framework establishes no mechanism -- other than recertification by the LFA -- for the Commission to become cognizant of changes in competitive conditions. Further, as a practical matter, the Commission does not have the resources that would be needed to monitor the entire cable industry and update designations of effective competition on a rolling basis. Indeed, even if the FCC were to do so based on some independent authority, it is not clear that this information could be used in an annual cable rate survey. The Commission is required to report annually on cable rates, comparing cable systems subject to "effective competition" with those not subject to "effective competition" as defined in the statute. Even if the Commission could determine changes in competitive status, the law would require that we continue to report cable rates pursuant to the legal definition of effective competition. Thus, to the extent the report suggests that the FCC should update periodically its view of the competitive situation in individual franchise areas, such an effort would not only be *ultra vires* and beyond the limits of the Commission's resources, it ultimately would not provide the data needed to fulfill our legal obligation to report on cable industry prices.

See comment 4.

By making ad hoc determinations of competitive status based on current market conditions and using an econometric model, GAO found a 15% differential in cable rates between wire-based competitors and noncompetitive operators. In the 2002 Price Survey Report, also using an econometric model, the Commission found a 7% differential between wire-based competitors and noncompetitive operators. The GAO report may be misleading in this regard because it draws a comparison between these two percentages even though they were estimated based on two different sets of competitive cable operators. As mentioned in the report, GAO sought to determine the current status of competition in each franchise. The Commission, on the other hand, followed the statutory framework and included only those operators where a finding of effective competition has been made.<sup>1</sup>

See comment 5

See comment 6

<sup>1</sup> Although both GAO and the Commission use simultaneous equation models estimated via three-stage least squares, GAO uses a different set of explanatory variables than the Commission. This could explain some of the (continued )

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With respect to the Commission's use of estimates to explain rate increases, the GAO report suggests that our Price Survey Report may not provide "a reliable source of information" on the factors that underlie recent cable rate increases because the cable operators participating in our survey did not respond to these questions in a consistent manner. The report further observes that many cable operators responding to our survey may have underestimated the importance of certain factors, and by so doing, would have overestimated the importance of programming costs as a factor contributing to rate increases.

We acknowledge in our 2002 Price Survey Report that the responses to these particular questions may not have the same degree of accuracy as, for example, the responses to questions regarding monthly rates. We also observe that because the survey requires the factors to equal the amount of the rate increases that are being explained, if one or more factors are underestimated, then the remaining factors will be overestimated. Despite these shortcomings, we provided the estimates because we believed that, on balance, they provide information that helps put the changes in rates in perspective with reported cost increases. It is instructive to note that GAO's findings, which were arrived at through an independent survey, appear to corroborate the estimates provided in our Price Survey Report. For example, we reported that cable operators attributed 65.8% of their rate increases for 2002 to increases in programming costs. Using information in GAO's report, we can calculate that your survey finds that programming cost increases would explain about 60% of rate increases for 2002.<sup>2</sup> Although these results differ by approximately 5.8 percentage points, on balance, our estimates provide useful information that helps put the

( continued from previous page)

difference between GAO's and the Commission's findings. In addition, we believe that multicollinearity is present among the explanatory variables included in the GAO model, i.e., the explanatory variables influence each other as well as the variables being explained. This makes the GAO model sensitive to even small changes in the choice of explanatory variables, i.e., a small change in the list of variables selected as explanatory variables will result in a large change in the result. This also could explain why some of the estimates in the GAO model are statistically not significant and have the opposite sign from that which would be intuitively expected.

<sup>2</sup> The GAO report observes that for the nine operators included in GAO's survey (which covers 62% of all cable subscribers) annual programming expenses on a per subscriber basis increased from \$122 in 1999 to \$180 in 2002, a 48% increase over three years. On a monthly basis, that equals \$10.16 in 1999 and \$15.00 in 2002, a \$4.84 increase over three years, or an average increase of \$1.61 per year. An increase in programming costs of \$1.61 (per month per subscriber) would explain 60% of the \$2.66 by which basic and expanded basic cable service rates increased in 2002. We note that 60% falls within the confidence interval around the 65.8% estimate provided in our report. Several caveats are necessary for comparison of these two percentages. First, the GAO survey covers a particular segment of the industry — nine of the larger MSOs — while our survey covers a random sample of the entire industry. Typically, smaller cable operators pay somewhat more than larger operators for their programming, and thus may face larger cost increases. Therefore, the GAO sample may understate the importance of programming cost increases from the perspective of the entire industry. Second, the 60% figure derived from GAO's survey is based on an average over the three years covered by GAO's data — 1999 to 2002, while our data covers a two year period, 2001 and 2002, and reports each year separately. If programming cost increases were accelerating during those three years, the increase in 2002 would be greater than average. Similarly, if decelerating, the increase in 2002 would be less than average. The GAO report provides some information, particularly in the charts on pages 23 and 24, that suggests that programming cost increases accelerated in 2002 in comparison with the trend of the prior three years.

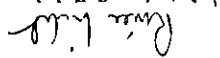
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change in rates in perspective and are consistent with your findings

Finally, based on discussions with GAO staff, we have redesigned our survey questionnaire for 2003 to eliminate questions that rely on estimates and to substitute other questions for which we believe cable operators can provide more accurate information. We also provide more complete explanations for these questions in our 2003 questionnaire, as recommended by the GAO.

We very much appreciate the opportunity to review and comment on this draft report, and thank GAO staff for their helpful suggestions that we are incorporating in our next Price Survey questionnaire.

Sincerely,

  
Andrew S. Fishel  
Managing Director

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Federal Communications Commission  
Washington, D.C. 20554

October 9, 2003

Mr. Mark Goldstein  
Acting Director, Physical Infrastructure Issues  
United States General Accounting Office  
Washington, DC 20548

Dear Mr. Goldstein:

This is in response to our discussion regarding the Commission's statutory authority to modify its findings of effective competition or establish new procedures to account for changed circumstances with respect to effective competition adjudications in particular local franchise areas ("LFAs").

Pursuant to Section 623 of the Communications Act, the Commission is authorized to make findings of effective competition and has established rules to do so. In accordance with the authority granted to the Commission in Section 623, the procedure for making a decision as to the presence or absence of effective competition is necessarily an adjudicatory one. As currently promulgated, the Commission's rules do not contemplate a reassessment of an effective competition adjudication, except through the LFA recertification procedure. The Communications Act neither explicitly authorizes the Commission to, nor prohibits the Commission from, revising its rules to limit the duration of such findings or require a cable operator to periodically certify that it continues to meet the specific standard which was the basis of its grant of effective competition status. In today's increasingly competitive environment and from a cost/benefit perspective, however, we seriously question the utility of such an approach for several reasons.

First, based upon our experience, it is unlikely that such a mechanism would significantly change our findings with respect to the comparison of rates charged by competitive and noncompetitive cable operators. We have examined various combinations of competitive operators and at the possibility of reformulating the competitive list in various ways and find that the end result would be an almost negligible change in the average rate found for the competitive group.

In this regard, we note that there are other considerations and issues that must be taken into account in the context of our price survey and effective competition findings. Although the Commission could possibly modify the procedural rules associated with findings of effective competition, it is not clear that it could, for purposes of comparing the rates of competitive and noncompetitive operators, by-pass the due process requirements involved in order to properly evaluate those communities that have never been the subject of an effective competition finding. In other words, shifting from a comparison that is based on the legal status of the communities in question as is done now, to a comparison based on an updated review of only those communities subject to a previous adjudication would not appear to improve the overall process. This would

See comment 8

See comment 9.

See comment 10.

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particularly appear to be the case where the level of competition is increasing year-to-year so that the number of communities reverting to a non-competitive status is likely to be limited and the number of communities facing effective competition for the first time is likely to be significant. Any attempt to reevaluate the effective competition findings formally while looking at the lack of effective competition situations informally would involve mixing two entirely different types of decision making. Such an effort also would increase the level of resources that would have to be devoted to the price survey process without necessarily improving the value of the work product significantly.

Second, it appears that under the new procedures you suggest we would only reexamine those cable systems determined to face effective competition, a process that does not address the very large number of "noncompetitive" cable systems where the conditions for "effective competition" are actually present but there has been no formal determination. For example, DBS penetration has reached an average of 15% or more (the threshold for a finding of effective competition) in at least 40 states, suggesting that there are many cable systems in those states that would meet the "effective competition" test should a petition come before us. There are more than 33,400 franchise areas registered with the Commission. In order to update our list of "noncompetitive" operators for current circumstances, we would have to review virtually all of those franchise areas for the current status of competition. This would represent a burden that would be significantly beyond our resources. Moreover, as we have noted in previous discussions, the data necessary for this exercise is not readily available to us.

Third, many effective competition decisions, particularly those involving LEC competition pursuant to Section 623(1)(D), are not objectively clear cut such that parties could reliably certify or recertify the existence or non-existence of effective competition periodically. By their very nature, LEC effective competition decisions are not reducible to neat equations by which cable operators can periodically self-certify. Decisions under the LEC test often turn on Commission value judgments based on variables such as build-out schedules, performance bonds, incumbent response and lack of obstacles to construction. It would be extraordinarily difficult for the Commission to rely on an operator's decision to certify that the circumstances underlying a LEC adjudication are unchanged. Only through the adjudicatory process can the decisional import of such factors be determined, i.e., the process intended by Congress as reflected in the statutory scheme.

We appreciate the opportunity to engage in this dialog.

Sincerely,



W. Kenneth Ferree  
Chief, Media Bureau

See comment 10

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The following are GAO's comments on the Federal Communications Commission's letters dated September 24 and October 9, 2003.

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## GAO Comments

1. In a letter dated September 24, 2003, FCC contended that under the statutory framework to which the commission is legally obligated to adhere in making effective competition determinations, it would be *ultra vires* for the commission to update designations of effective competition on a periodic basis. In other words, FCC stated that it did not have the legal authority to update periodically its view of the competitive situation in individual franchise areas. We disagree that the commission's authority is so limited. In order to better understand the view that the commission stated in its letter (i.e., it was prohibited from modifying its rules to ensure that effective competition designations are reflective of current conditions and continue to meet the statutory definition to the maximum extent possible), we contacted FCC. On the basis of a conversation between commission staff and GAO staff, FCC provided us with a second letter dated October 9, 2003, that modified its views as expressed in the September 24 letter. In the second letter, FCC acknowledged that it was not statutorily prohibited from revising its process (see GAO's comment 8).
2. Although local franchising authorities do see the information that a cable franchise provides to FCC in an application for effective competition, from filings that we reviewed, we found that these authorities at times question the validity of the data and/or estimation methodologies. For example, some have noted that reliance on 2000 census data on housing units can lead to an overstatement of DBS penetration because in areas with growing populations, housing estimates from 2000 will understate the current number of housing units in an area. Such an understatement will result in an overstatement of the DBS penetration rate. Moreover, under FCC's rules, local franchising authorities have limited time to review such information after it is submitted.
3. Resources could clearly be an issue for taking steps to update the status of effective competition, and FCC should consider this issue when revising its process to keep the status of effective competition up to date. FCC could consider requiring cable operators to certify on a periodic basis that they still meet the statutory definition and if no certification is provided, the finding would be removed. Alternatively, as part of the cable rate survey, FCC could ask any franchise having a designation of effective competition to provide information if that

status has changed and, under modified rules, use this as a basis for changing the effective competition finding.

4. To develop our measure of competition, we reviewed many sources of information, including information from FCC, information from and about particular providers, as well as information gathered through discussions we had with local franchising authorities. We were not attempting to determine which franchises would have effective competition under the legal definition. Instead, we focused on establishing when meaningful competition, from an economic perspective, was likely to exist.
5. We cite FCC's finding on the difference in prices in places with and without effective competition, but the more direct comparison for our model is FCC's output from its econometric model contained in its 2002 Cable Pricing report. In that model, FCC tests for the price reduction that occurs where there is *wireline* competition. Although FCC did not explicitly define this term in their report, our review of that analysis led us to believe that this measure is equivalent or very close in concept to our definition of wire-based competition. That is, FCC is attempting to measure how prices differ when a cable franchise faces a direct wireline overbuilder in the area, which does not include all places that have effective competition. Thus, we believe that the two measures of wireline competition—that is FCC's and GAO's—did not differ in *concept*.
6. We performed standard statistical tests for the evidence of multicollinearity in our model and did not find a significant problem. Moreover, we tested FCC's variable for wireline competition in our model, and we tested our measure of wireline competition on FCC's model. Since we know the findings from each agencies' variable on its own model, we were able to discern whether the differences in the findings from the two models were caused by differences in the two models or by the measure of wireline competition. We found that using FCC's measure of wireline competition in our model produced a finding similar to that reported by FCC, and using our measure of competition in FCC's model produced a finding similar to that found in our model. From these findings, we have concluded that any differences between the findings of FCC and those of GAO are not caused by differences in the two models, but are due to differences in how the wireline variable was measured. Further, the GAO and FCC models have much overlap in the independent variables specified in the model, and, as such, the degree to which there are concerns about multicollinearity, this would be true of both models.

7. We agree that FCC's estimate of the percentage of the yearly rate increase that can be attributed to programming costs is relatively accurate because, as we note in our report, most of the 100 cable franchises we interviewed noted that they used actual data when calculating these costs. However, we did find that other cost items, such as infrastructure investment, were reported with less accuracy and, in some instances, were simply "plugs" to ensure that the cost and rate increases were equal. In fact, while FCC found that in 2002 about 6.2 percent of the rate increase was attributable to infrastructure costs, the findings from our survey of 9 large cable operators shows that overall infrastructure costs increased by \$2.23 per month per subscriber—or about 84 percent of the average rate increase reported in 2002. While these estimates of infrastructure costs vary considerably, we recognize that our reported infrastructure cost are not directly comparable to the average rate increase since the average cost of \$2.23 per month per subscriber includes some infrastructure costs not attributable to the basic and expanded-basic tiers of video service. We believe that these findings are consistent with a major point in our report: that is, the data reported on cost increases for programming were largely accurate, but the requirement that the sum of cost increases equal the average rate increase may have caused reduced estimates for other cost factors.
8. In its October 9 letter, FCC recognizes that while the statute authorizes it to make findings of effective competition, the commission implements this authority through the rules it has established. The commission notes that its current rules do not contemplate a reassessment of effective competition adjudication, except through the Local Franchise Authority recertification process. However, FCC states that the statute neither explicitly prohibits nor authorizes the commission from revising its rules. Accordingly, FCC now acknowledges that it could possibly modify the procedural rules associated with findings of effective competition, although the commission notes that it is unclear, in its view, whether this would work in communities lacking an effective competition designation.
9. We believe that when effective competition designations more accurately reflect current conditions, the resulting analysis provides a better measure of the impact of competition on cable rates. As we note in our report, we found that wire-based competition was associated with 15 percent lower cable rates, while FCC's report found that cable rates were approximately 7 percent lower with this competition. We believe the difference in these results is primarily the result of steps

we took to update FCC's wire-based competition variable (see GAO's comment 6).

10. In our subsequent conversation with FCC staff, they asked us to identify possible ways that effective competition determinations could be kept more up to date. We identified a number of possible options that the commission could consider, recognizing that the commission would be the appropriate party to determine how this could best be done. We made a number of suggestions including (1) having effective competition determinations be time limited, (2) having the cable operator periodically certify that the circumstances under which the effective competition determination had been made had not changed, and (3) utilizing the information gathered as part of its Annual Price Survey to update the effective competition determinations. In its October 9 letter, the commission questions from a cost/benefit perspective the utility of such approaches.

FCC's underlying concerns about these approaches is that the market has changed. The commission notes that the level of competition is increasing year to year so that the number of communities reverting to a noncompetitive status is likely to be limited, while the number of communities facing effective competition for the first time is likely to be significant. For example, the commission provides that DBS penetration has reached an average of 15 percent or more (the threshold for a finding of effective competition) in at least 40 states. In our view, these changes in the market *emphasize* the need for FCC to review its process for making effective competition determinations. Moreover, as FCC emphasizes, the commission has a statutory mandate to report on average prices comparing cable systems that it has found are subject to effective competition with cable systems that it has found are not subject to effective competition. We believe that this report should, to the maximum extent possible, reflect the current conditions in order to ensure its utility.

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# Appendix VII: Comments from Industry Participants

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Below we summarize the written and oral comments that we received from industry participants that reviewed a draft of our report. Because many of these comments are opinion-based, we are not offering our views on them. In one case, however, we provide some clarifying information about the GAO model on cable rates.

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## American Cable Association

The American Cable Association (ACA) noted that because we focused much of our analysis on larger cable operators, the report does not address issues of great importance to ACA and its membership, which are mostly small cable operators. ACA noted that for smaller cable operators, DBS providers are highly competitive, and programming costs are an even higher percentage of overall costs than is the case for larger cable operators. As a result, ACA disagreed with our suggestion that greater competition is a potential solution to increasing cable rates.

ACA provided, in its comments, a number of policy solutions that would address, in their view, the level of programming costs. Such options include mandating public disclosure of programming rates, requiring an à la carte or minitier regime, overhauling of the retransmission consent process, and requiring similar regulatory obligations for the DBS and the cable industries. Additionally, ACA disagreed with our conclusion that an à la carte system would impose additional technical costs and not cause cable rates to generally decline. Further, ACA did not believe that we adequately addressed the link between increased carriage of cable networks affiliated with broadcasters and higher cable rates.

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## Consumer Federation of America

A representative of the Consumer Federation of America suggested that the costs associated with infrastructure upgrades were recouped from revenues generated by advanced services, such as the digital tier and cable modem service, and should not influence cable rates for the basic and expanded-basic tiers. Therefore, this representative believes that we overstate the contribution of infrastructure costs to increasing cable rates. Moreover, this representative noted that we do not fully account for the revenue obtained from advertising, which in this representative's view, should mitigate the need for increasing cable rates.

This representative also provided several comments on GAO's cable network carriage econometric model. First, this representative suggested that advertising revenues per subscriber could be treated as an endogenous variable—that is, it is a variable that is codetermined with other dependent variables in the model. Second, this representative

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suggested that we include a table reporting the results for the alternative specification, in which we consider cable networks owned by a cable operator.

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## Consumers Union

A representative of Consumers Union believes that our finding that cable rates are 15 percent lower where a second wire-based competitor is present is evidence of cable operators' market power. He believes that we should measure the savings to American consumers that would accrue if cable rates were 15 percent lower in all franchises throughout the country. Additionally, this representative believes that our draft overstated the negative aspects of regulation. He stated that regulation may be the only viable option for addressing cable operators' market power because wire-based competition may not be feasible on a widespread basis.

Regarding our analysis of ownership affiliations, this representative believes that we should test for the impact of lower ownership thresholds, in addition to the analysis of majority-owned networks.

This representative made numerous comments regarding an à la carte system. First, he suggested that we overstated the costs of equipment associated with an à la carte system, and he noted that (1) the necessary equipment is currently being deployed and (2) the Congress is pushing the cable industry toward a digital conversion. Second, he noted that our discussion assumed that cable operators would pay any increases in license fees arising from a decline in cable networks' advertising revenues. But, he believes cable operators will exercise their market power and therefore refuse to fully pay the higher license fees that cable networks will seek. Moreover, this representative did not accept that advertising revenues would dramatically decline in an à la carte regime, and he stated that advertising revenues for the most popular cable networks might increase because advertisers will be able to clearly target subscribers viewing these networks. Third, he stated that GAO understates how many subscribers could benefit from an à la carte approach. He also stated that a substantial percentage of subscribers—perhaps as many as 40 percent—could see their monthly bill decline because most subscribers do not watch many networks. Finally, he noted that fundamentally there is tremendous uncertainty regarding the outcome under an à la carte regime.

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## National Association of Broadcasters

National Association of Broadcasters officials identified several issues associated with the cable industry. First, they stated that while our report implies that a greater number of channels are a benefit to subscribers, it is not clear whether this is the case. Second, they also noted a concern about how we measured the popularity of cable networks for the cable network carriage model.

These officials noted that in discussing pricing under an à la carte system, we should include the possibility of cable operators implementing a pricing scheme wherein subscribers are charged a flat monthly fee for access to the cable network and additional fees for each network selected. They believe that this would be the pricing structure implemented because cable operators must be able to recoup costs associated with their networks and overhead that are currently imbedded in the price for the basic and expanded-basic tiers.

Regarding retransmission consent, these officials do not believe there was sufficient discussion in our report of the history of retransmission consent. In particular, the option for cable network carriage in lieu of cash payment for retransmission of the broadcast station was largely supported by the cable industry. Additionally, they noted that our discussion regarding how retransmission consent is used was too broad because it implied that all broadcast stations use retransmission consent to gain carriage, while there are only a limited number of stations that do so.

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## National Association of Telecommunications Officers and Advisors

The National Association of Telecommunications Officers and Advisors (NATOA) noted that the focus of our review was cable rates for the basic and expanded-basic service tiers, but equipment rental—such as converter boxes—are also rising. NATOA noted that we correctly pointed out that the benefits of infrastructure investment may confer largely to subscribers of advanced services, but it noted that FCC rules continue to allow these costs to be allocated to basic rates and rates for equipment.

NATOA also raised concerns about the lack of government data on cable rates and related issues. NATOA expressed concerns that we relied on FCC data—which we have noted may not be of high reliability—as well as on data from Kagan World Media, a cable industry data vendor. For example, NATOA expressed concern that we had no hard data on expenditures on customer service. NATOA noted that we should recommend to the Congress that some responsible agency (such as the Department of Justice) conduct an audit of the cable industry, including

an examination of the contracts between cable networks and cable operators for the purchase of programming.

NATOA also raised concerns about how we analyzed the effect of ownership relationships on the cost of programming. NATOA's comments noted that our analysis of the effect of "majority-owned" programming was too limited, and that we should have included a broader definition of ownership affiliations, including, for example, agreements between companies that are separately owned, for this analysis.

According to NATOA, infrastructure investments are largely a benefit to subscribers of advanced services and, to the extent that basic and expanded-basic rates rise due to these investments, it represents a cross-subsidy.

NATOA also pointed out that, as we have noted, DBS penetration data used for *effective competition* filings have not been fully validated and are generally not available to stakeholders other than the cable operators. Moreover, NATOA noted that the Congress should reevaluate the 15 percent penetration level required under law for a finding of effective competition when the basis is competition from DBS providers. NATOA also noted that our finding of a 15 percent price reduction in areas with a wire-based competitor may be the result of temporary price discounts by new companies. Finally, NATOA noted that we do not fully discuss in this report the ramifications of a finding of effective competition. In particular, NATOA noted that we did not discuss that cable franchises with such a finding no longer have to price uniformly across the franchise area and are no longer subject to the tier buy-through provisions of the Cable Television Consumer Protection and Competition Act of 1992.

Lastly, NATOA noted that it is critical for us to make it clear that, on the basis of the model results, there is only a *slight* reduction in cable rates due to the level of DBS penetration.

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## National Broadcasting Company

National Broadcasting Company (NBC) officials suggested that we explain why broadcaster-owned cable networks are more frequently carried than other cable networks. In their view, cable operators, as a rule, do not pay any license fees for the right to carry a local broadcast station, notwithstanding the value of that programming to the cable operator. They also noted that, according to our data, cable operators also do not pay higher license fees for the right to carry these broadcaster-affiliated networks. Instead, NBC officials said that the sole compensation that

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broadcasters receive in exchange for retransmission of the local broadcast stations' programming is an arguably higher penetration of cable carriage for their affiliated programming networks.

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## National Cable and Telecommunications Association

The National Cable and Telecommunications Association (NCTA) had serious concerns about the finding from our econometric model, which indicates that cable rates are 15 percent lower in markets with a second wire-based competitor. NCTA officials noted that only about 45 franchise communities have such an overbuilder compared with about 10,000 cable systems nationwide. They also noted that the number of such overbuilders has declined in recent years, and the type of companies operating these businesses has been changing. As such, they believe that it is not appropriate to extrapolate these findings for the vast majority of markets that currently have no wireline competition. In its written comments, NCTA noted that "given the limited nature of wireline overbuild competition, it is important not to overstate its importance to determining a 'competitive' rate."<sup>1</sup>

NCTA officials stated that there is no link between the possible exercise of market power and the increase in cable rates. They noted that, according to FCC's survey, rates for areas with effective competition have actually risen in the last 2 years at a slightly faster pace, on a percentage basis, than rates in areas without effective competition.

These officials also noted that our study did not take into account the rise in the quality of cable programming. In particular, they noted that a recent study by Professor Wildman, of Michigan State University, found that when analyzed on a price per-viewing-hour basis, cable rates have declined significantly in recent years. Additionally, they noted that there have been enormous benefits from the upgraded infrastructure of cable systems. They also noted that important benefits to those upgrades accrue to video subscribers (even if they do not take advanced services) in the form of better picture quality and more reliable cable service.

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<sup>1</sup>In our model, we included approximately 100 franchises that were classified as facing wire-based competition—we believe that FCC's number of only 45 overbuilders, as cited by NCTA, does not include all wire-based competitors. Moreover, the sample of franchises included in our model was only about 720, which were randomly selected by FCC to be representative of the universe of franchises. As such, approximately 16 percent of the franchises included in our model were classified as having a wire-based competitor.

NCTA officials had two comments related to cable operators ownership of cable networks. First, they stated that our discussion of program access rules implied that there could be a significant problem for entrants' gaining access to programming. Conversely, they noted that program access concerns have always been minimal and that, if anything, these problems have declined in recent years, in part because few cable networks are owned by cable operators. Second, in terms of the carriage benefits that accrue to cable networks owned by cable operators, these officials noted that few cable networks are owned by cable operators. As such, they believe that while these cable networks may have an advantage in carriage, this is not a serious concern.

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## News Corporation

Regarding programming costs, News Corporation (Fox) officials stated that the 59 percent increase in the cost of sports programming that we reported seemed high, and they suggested that we mention that the analysis did not include regional sports networks. Further, these officials also noted that the 72 networks that we compared with the sports programming networks include some networks that are not widely distributed. They said that our inclusion of such networks could exacerbate the difference in programming costs between the sports and nonsports networks because some of the less distributed networks would have low license fees.

News Corporation officials noted that one reason the sports leagues might have told us that the cost of sports rights has not increased much in the past year is because the leagues are in the middle of multiyear contracts. These officials noted, however, that when compared with previous multiyear contracts, there has been a large increase in the cost of sports rights.

Regarding retransmission consent, News Corporation officials noted that broadcast networks are highly valuable to consumers. Further, they noted that there are important objectives served by the retransmission provisions that should be more fully discussed in the body of our report.

These officials cited two concerns regarding our cable network carriage model. First, they indicated that we should include an explanatory variable for the price, or license fee, for each cable network. Second, they believe our model should include a variable that incorporates launch fees.

News Corporation officials believe that it is important to note that even if people only watch 17 channels, consumers value having access to more

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than 17 channels. Moreover, they indicated that consumers may not choose to watch the same 17 channels in any given year.

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Satellite Broadcasting  
and Communications  
Association

The Satellite Broadcasting and Communications Association chose to provide no comments.

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Viacom

Viacom (CBS) chose to provide no comments.

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Walt Disney Company

Walt Disney Company (ABC) officials said that our draft provided extensive information on how programming costs have increased over time, but did not provide enough coverage of how infrastructure costs have changed over time. Additionally, they believe the figures for programming costs that we reported are too high, and similarly that advertising revenues offset a greater portion of programming costs than we reported.

Disney officials noted that the value of cable service today is much greater than it was in the past in terms of the number of networks and quality of programming that subscribers receive. As evidence, they said that subscribers are watching cable networks more and broadcast networks less. They referred to a study prepared by Professor Wildman, of Michigan State University, which estimated the "real" cost of cable by considering viewing hours; the study finds that the value of cable service to subscribers has risen dramatically in recent years.

Regarding a sports tier, these officials noted that a sports tier only exists in New York, and that it has been bitterly fought-over, involved mediation, and is only a 1-year agreement. Moreover, they believe we should emphasize that the Yankees Entertainment and Sports (YES) network agreement only applies to *regional sports* networks, not ESPN. They said that the YES arrangement does not represent a trend and noted, for example, that cable operators continue to place *cable-affiliated* sports networks on the expanded-basic tier.

Regarding retransmission consent, Disney officials said that we should provide more discussion about why the Congress passed this provision. They believe that without retransmission consent, free over-the-air television would be undermined. Moreover, they said that, prior to

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retransmission consent, broadcasters were required to provide content free of charge to cable operators that they subsequently sold to subscribers. Additionally, they said that it is important to note that the option of carriage of broadcaster-affiliated cable networks instead of payment for retransmission was discussed by Congress and has been endorsed by FCC. More importantly, according to these officials, Disney always offers a cash option to cable operators—their most recent offer was 70 cents per subscriber per month.

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# Appendix VIII: GAO Contacts and Staff Acknowledgments

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## GAO Contacts

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## Staff Acknowledgments

In addition to those named above, Stephen Brown, Julie Chao, Andy Clinton, Keith Cunningham, Michele Fejfar, Sally Moino, Tina Sherman, Wendy Turrene, Mindi Weisenbloom, and Carrie Wilks made key contributions to this report

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